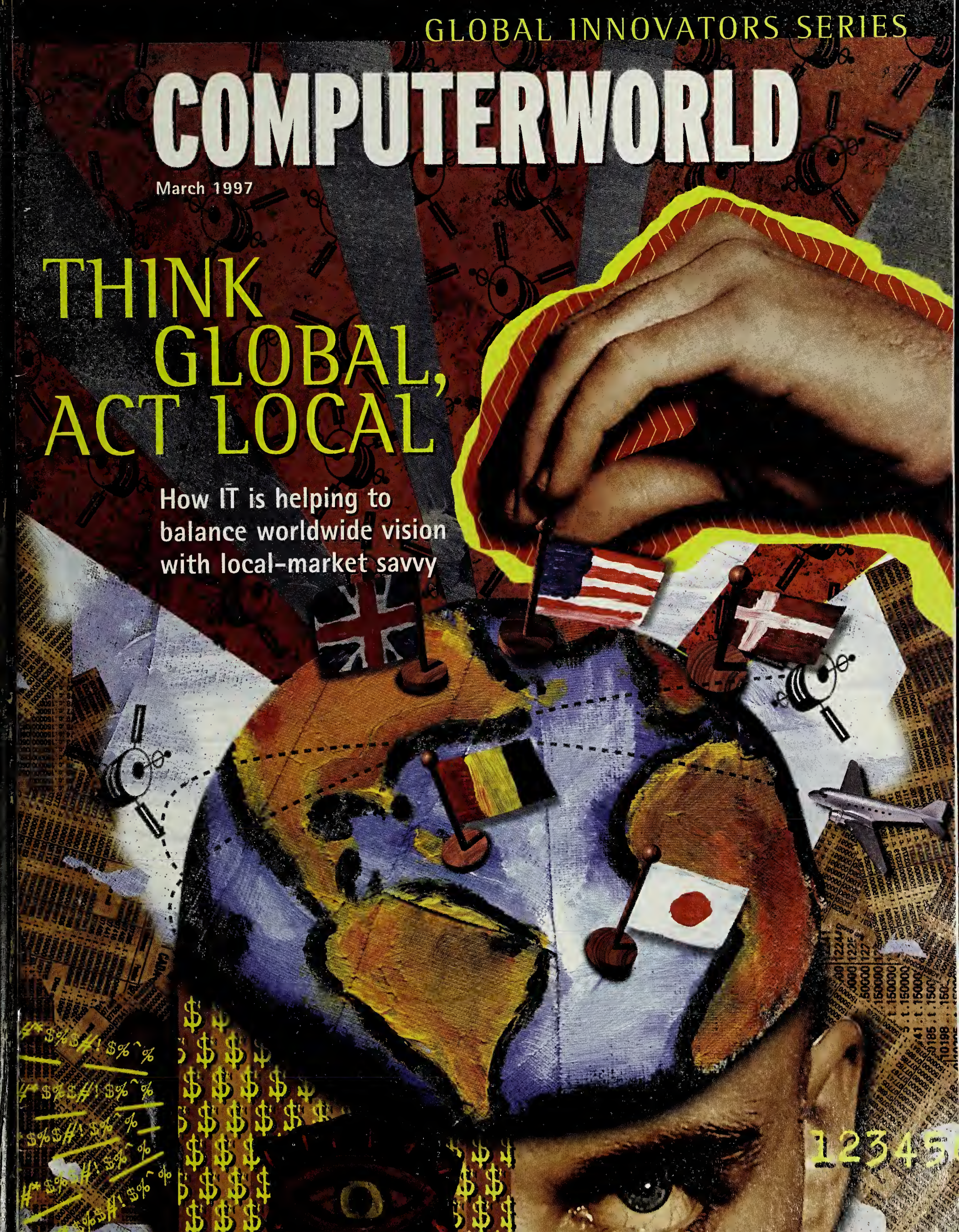# COMPUTERWORLD

March 1997

THINK GLOBAL, ACT LOCAL

How IT is helping to
balance worldwide vision
with local-market savvy

12345

Hockey fans should visit www.nhl.com. CIOs should visit www.internet.ibm.com/secureway/commercepoint.html

Global Go-getters

Companies in today's global economy are trying in earnest to find the next best place to make their mark, be it in Singapore's increasingly networked society or in the turbulent markets of Latin America.

But most are not content to simply hoist their flag on multiple lands. There are far greater advantages — and, of course, some greater challenges — to establishing yourself as a truly "global" entity. Besides the obvious language and cultural barriers, there's also the difficulty of working with varying network infrastructures, syncing up far-flung business and systems processes and maintaining a consistent IS vision across the entire enterprise.

In our Global Innovators series, Computerworld will explore these unique challenges and the ways in which the brightest companies are solving them. In this issue, you'll read about organizations that have managed to develop a global vision and build on their worldwide strength but at the same time serve the specific needs of local markets. Key to this effort are global information-sharing systems such as intranets; well-coordinated technology efforts that promote standardization; and flexible infrastructures that allow localized systems to meld with centralized databases.

In future issues, you'll read about how companies are dealing with global software support, how they are developing systems that operate on a 7 by 24 basis for all time zones, whether the Internet can really help establish a global presence and more.

Let's face it: The global economy is here. And only the innovators will be ready to take prime advantage of it.

Mary Brandel

MARY BRANDEL
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African-European Network Means Peachy Prospects for Capespan

FRUIT EXPORTER TRACKS $1 BILLION OF PRODUCE FROM AFRICA TO EUROPE

BY JEANETTE BORZO

It's hard enough to get home from the grocery store with unbruised apples, oranges and other produce. How would you like to be responsible for safely delivering 83 million cartons — or about three-quarters-of-a-million tons a year — of oranges, plums, apples, mangos and avocados from South Africa to a host of European countries? And make that on time and in good shape.

That is the challenge posed to Gwynne Foster, current manager of information services at Capespan International PLC, based in Farnham Royal, England. The company is jointly owned by two South African fruit exporting companies: citrus exporter Outspan International in Pretoria and deciduous-fruit exporter Unifruco Ltd. in Cape Town. The company reached $825 million in revenue in 1995 and hopes to increase that to $1.5 billion by 2000.

For Foster, managing information systems means finding solutions for marketing, distributing and selling South African fruit to Europe. Her main challenge has been to implement a transcontinental system that ensures Unifruco's Granny Smith apples and Outspan's navel oranges make the trip to Europe safely and on time.

"The situation is becoming more complex and difficult, and we are radically rethinking some of our earlier strategies," she said.

NO BANANAS TODAY

South Africa's recently renewed ability to trade with Europe, along with changing market forces in the produce industry, made it clear to Capespan in the early 1990s that it needed to change the way it moved its product.

"What has happened over the last 10 years is the rise of the supermarket," Foster explained. "When you walk into a supermarket in the UK, every apple has a label on it." Partly because of such branding changes in the fruit indus-

view

try, "*we* have to be sure the apple is of good quality" rather than the retailer, she said.

Four years ago, Capespan's tracking system indicated how many cartons of each kind of fruit were being shipped, but that was about all the information provided, and most information was gathered manually. When the produce arrived in Europe, last minute business-savvy decisions, such as customer-specific labeling requests or changes in delivery times, were out of the question.

"We had to get a lot closer to the end customer," Foster said.

EASY AS APPLE PIE?

Through IBM Global Network, Capespan linked more than half of its 200 trading partners with a variety of PC-based tracking systems within 18 months. All systems now link back over the network to three online hubs: IBM AS/400s in Capespan and Outspan offices and a Unisys

Corp. 2200 at Unifruco offices. Working with IBM Global Services, Capespan launched its new tracking system, which was phased in during 1994 and '95.

In order to collect more information about the exported fruit, a Unix-based tracking system with bar-code readers for radio frequency scanning was implemented in the originating South African ports. The handheld scanners act as terminals that link directly into the Unix host. "From that information, we create a manifest of what is on a vessel and transmit that to Europe," Foster said. Capespan sends the information, including details about the product's inspection, growers, packaging and chemical treatment, to sales offices and receiving ports so sales offices know what will be available for sale, and ports know what they need to off-load.

"Capespan can then do its

planning of where to off-load the fruit, feeding that information further down the chain to the marketing offices so they can start allocating product to sales agents," Foster said.

Once the information gets to Europe, Capespan's partners use two different PC systems to track the produce: one for European ports and cold storage facilities and another for sales agents. All the systems link back to Capespan through the IBM Global Network, which is linked directly to Capespan's UK office via 64K bit/sec. digital lines provided by BT.

A BOWL OF CHERRIES

Electronically tracking its products gives Capespan the responsiveness and flexibility it needs in an ever-changing global market.

"We have systems in place from the intake points through the ports and through to the sales agent," Foster said. "If you get that data in right, everyone else in the chain should benefit."

When a boat docks, the port already knows where to send the fruit, whether on to another port or directly into cold storage. Fruit is inspected so that any surprises, such as fruit that ripened too quickly, can be off-loaded and sold immediately. In turn, information about any change in plans — 100 cartons of peaches that won't arrive in Hamburg, Germany — is fed immediately into

Please turn to next page

CAPESPAN'S GWYNNE FOSTER: RETHINKING EARLIER STRATEGIES

JUSTIN LEIGHTON

Reaching Out From Down Under

MANUFACTURERS IN AUSTRALIA LOOK TO THE WEB TO GAIN WORLDWIDE STATUS

BY LOUISA BRYAN

The "tyranny of distance" is a well-worn phrase for Australian manufacturers. But the geographical distances that have historically isolated Australia from the world's largest trade centers may soon collapse.

In an effort to bring the world "down under," the Australian government is funding a project, now in pilot, to band together manufacturers to conduct trade — first domestic and then international — over the Internet. The hope is to create a "live" goods and services trading floor on which online bidding, buying, selling and marketing can be done over the Internet with a Java-capable browser.

The Australian Chamber of Manufacturers (ACM), the nation's largest multi-industry employer organization for manufacturers, is developing the system with technology from Tampa, Fla.-based Trade'ex, which sells electronic marketplace software.

The project is part of the federal government's "Innovate Australia" initiative, a goal of which is to strengthen Australian businesses' link to the world. "It takes companies that are looking to trade internationally around two years to actually get into the market," said John McCann, national business services manager at the ACM. "That includes initial market research, setting up the supply chain and developing and growing that market. That's a long time for a small or medium-size business without income."

With an Internet presence, though, "companies can attract an increased volume of interest and inquiries, as well as record these responses, so the two-year process can be cut down to only a few months," he said.

When the pilot ends in June, the system will work only domestically. But the ACM hopes to widen its scope to the international market this year.

Here's how it works: A Microsoft Corp. Windows NT server at ACM headquarters runs the Trade'ex Marketplace Server software. It stores information, including product descriptions, pricing and inventory about the manufacturers' products. This server also runs shopping and order modules for buyers, as well as selling and fulfillment modules for sellers.

Using the Market Administrator system, manufacturers can customize their product information over the Internet and can arrange for special promotions or multitiered pricing arrangements by company or region. A version of the system is now being rebuilt with Sun Microsystems, Inc.'s Java technology, which according to McCann will enable larger manufacturers to tie the system in to their existing systems to facilitate invoicing, payment and account collection.

Registered purchasers can enter the system over the 'net using a secure purchasing "swipe" debit card (being developed in accordance with the ANZ Bank) to select and purchase products directly on-screen.

To date, the pilot has involved about 1,500 manufacturers from various industries, including information technology, telecommunications, office equipment, stationery and printing. So far, the government has infused about $462,600 into the project, with time and

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the information chain.

"You can preadvise and ease the work on the port," Foster said. "The whole thrust of the system is to get information about the product in the chain before the product comes through the chain."

Foster hesitates to quantify financial savings accrued by the system. "A lot of what we have done is fundamental to survival, and we have not yet seen all of the potential benefit of what we've put in place," she said. "But had we not taken dramatic steps, we would not have supported our customers."

With the unification of Europe, Capespan will have new and extensive changes to make to its tracking system. The unification of the common European trading market has meant the emergence of pan-European fruit buyers, requiring renegotiated and new trading agreements for Capespan. As these technology systems accommodate the way business is done, the technology will have to change as business relationships do.

But for Capespan, adapting to a common European market would have been impossible without first installing the current system, Foster said. "The previous view of the world — that we bring in the product en mass to local sales offices — doesn't fit the trading environment moving in to the future," she said. "Ours is not a single system. It's a process — it's a hellishly complex process — but the system is necessary to prosper."

resources invested by the ACM and its partners doubling that figure. The ACM plans to collect a small percent of each sales transaction, McCann said. The organization predicted that by 2001, half of all purchasing transactions in the manufacturing sector will be made online, and it hopes to capture a significant amount of this business.

Pilot participants are enthusiastic, particularly about the real-time aspects of the system. "Current systems can't distribute information to the [distribution] channel fast enough," said Stuart Charlton, managing director of PDS International in Australia, a reseller and distributor of laptop computers.

The system is also better than launching a Web strategy on your own, said Jon Whittaker, logistics manager at Spicers Paper, a Melbourne, Australia-based paper merchant and pilot participant. "It's a far better marketing philosophy than putting out a Web page because our customers are generally manufacturers themselves. And for us, getting set up on Trade'ex was virtually labor-free because Trade'ex has done all the legwork for us," he said.

The system is attracting global interest. "To spread this technology worldwide, we're using a direct, long-standing network of international chambers of manufacturing commerce in cities around the world," McCann said. "Many of them are watching our progress with the pilot and would like to try parallel development of the same market sectors we have nominated here. This will facilitate trading for these manufacturing sectors on a global basis."

BRYAN IS MANUFACTURING EDITOR AT COMPUTERWORLD AUSTRALIA.

WIRED WORLD

OVERSEAS HOST

An increasing number of companies headquartered outside the U.S. are opting to host their World Wide Web sites inside the U.S., according to a recent study by O'Reilly & Associates, a U.S.-based research and publishing firm, and Netcraft Ltd. The obvious reason for this, O'Reilly said, is economic: Bandwidth costs are lower in the U.S. than in much of the world.
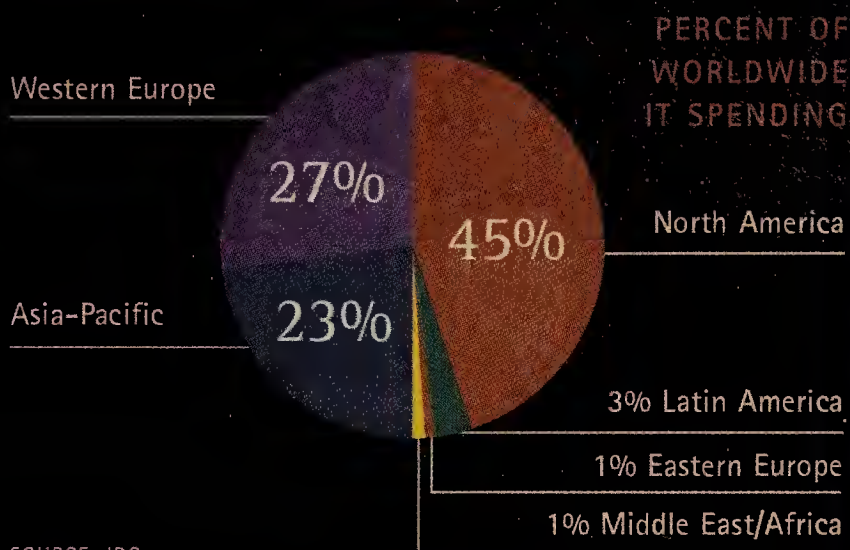
INTERNET ATTITUDES

In a recent study of 1,900 corporate buyers in the U.S., UK, France, Germany and Japan, International Data Corp. segmented worldwide Internet users into four categories, based on their attitudes toward the Internet: avid supporters, skeptics, wannabes and intenders (this last group intends to use the Internet in the future but isn't today).

- **U.S.**
  Highest proportion of "avid supporters."
- **JAPAN**
  More "skeptics" than "avid supporters" and "wannabes" combined.
- **GERMANY**
  40% are "skeptics."
- **FRANCE**
  More than half are "intenders."
- **UK**
  Evenly divided across all categories.

BIG SPENDERS

North America strongly dominates total worldwide IT spending, which was $680 billion in 1996, including hardware, software and services

PERCENT OF WORLDWIDE IT SPENDING

Western Europe 27%

Asia-Pacific 23%

45% North America

3% Latin America

1% Eastern Europe

1% Middle East/Africa

SOURCE: IDC

Where do you rank?

International Data Corp. recently joined with World Times, Inc. to create a benchmark index that tracks individual nations' progress toward an information society. The study included 55 nations that account for 97% of the world's gross domestic product (GDP) and more than 99% of the world's IT expenditures. Scores, which ranged from the U.S.'s 5,107 to China's 335, were based on 20 variables within the countries' information, computer and social infrastructures. Here are some outtakes:

- **THE U.S. AND SWEDEN** are the only two countries with scores over 4,000. The gap between the U.S. and Sweden is more than 1,000 points.
- **WESTERN EUROPE** (especially Scandinavia) accounts for six of the Top 10 countries.
- **THE UK** squeezed into the Top 10 but is pulled down by low rankings in school enrollments.
- **AUSTRALIA AND NEW ZEALAND** ranked higher than any other country on the Asian side of the Pacific Rim.
- **JAPAN** ranked 12th, mainly because of its strong mainframe (as opposed to networked PC) infrastructure.
- **CHINA, INDIA, PAKISTAN, INDONESIA, EGYPT** and the Philippines ranked very low due to insufficient telecommunications and computer access for their large populations.
- **THE CZECH REPUBLIC** is particularly strong in its social and computer infrastructures, and Hungary is strongest in its information infrastructure. Russia ranked a low 36th, despite its strong scientific community.
- **SOUTH AFRICA** has invested a relatively high percent of its GDP into IT, but at a ranking of 35, it has not yet seen this translate into commensurably high rankings.
- **NO LATIN AMERICAN** country is currently in a strong position to capitalize on the global information revolution.

SOURCE: INTERNATIONAL DATA CORP., A GLOBAL MARKET RESEARCH COMPANY

THINK GLOBAL, ACT LOCAL

BY MARY BRANDEL

The difference between a multinational company and a truly global one is like the difference between a tourist and a world traveler. The latter knows you don't tip bartenders in London, like you do in the U.S. He knows that in Paris, you need a special phone card to make a public phone call and that when dining in Iran, he might be served a sheep's eye as the guest of honor.

But this world traveler would also have universal reserves on which he could draw at any time. He would be indistinguishable from the locals no matter where he traveled, but his reputation and name would be world-renowned.

And that's the classic struggle of a global company: balancing the desire to have a single, recognizable corporate image with meeting individual expectations, market by market. The struggle is both cultural and technological in nature. "No one has the perfect answer to using business systems to support that requirement," said John Parkinson, a partner in the Center for Business Transformation at Ernst & Young in Las Colinas, Texas.

But lots of companies are trying. Take London's Guinness PLC, which operates in 140 countries and sells its namesake beer throughout the world. Being a vendor of

IT'S A CLASSIC STRUGGLE: BALANCING A UNIFIED CORPORATE IMAGE WITH A STRONG LOCAL-MARKET PRESENCE

intoxicating liquor, it has to be sensitive to local customs and must strike a balance between central control and letting overseas operations apply their local knowledge.

According to Mike Payne, information technology director of Guinness Publishing, the global network that connects the entire company is the means for making that happen. Respondents to a recent *Computerworld* survey seem to agree. Of 47 global companies, 35 said they have a global communications network. Of the 12 that do not, nine said they plan to build one in the next 18 months.

At Guinness, the network not only enables electronic mail for the entire company but also promotes a greater level of consistency, Payne said. For instance, the companywide intranet, under develop-

ment now, will help smooth the relationship between local marketing groups and the central marketing department.

"There is certainly a level of dynamic tension between the central marketing department and in-market marketing," he said. "Central marketing is responsible for the global marketing of the premium products, and locally the companies will want to push what they know will sell well." As a result, "the local companies have tended to do their own thing in the past with regard to local merchandising, some of which has caused a few shocks back at the center."

Because the intranet will enable merchandising material to be distributed more easily, "they will be able

to take [the data] and maybe tweak it a bit, but it will be based on something that has been agreed at the center," Payne said.

But building the intranet is only half the battle. The real challenge is to rally everyone in the company to become a regular content provider. BHP, a global resources company in Australia, faced this problem when it built its intranet in order to share business contacts around the world. The company operates across a diverse set of businesses, including steel, petroleum, services, minerals and copper, with operations in 59 countries.

The problem was, people tended to feel their data was proprietary, said Gus Ferguson, BHP's chief technologist. To tackle the problem, BHP called on its information systems council, made up of corporate IS executives, group-level IS executives and the head of BHP's IT group, which decided on a single, companywide infrastructure with a limited number of outside gateways. Groups, divisions and regions were forbidden to establish a parallel infrastructure or introduce new gateways.

Councils such as BHP's are often established at global companies that decide to build a worldwide IS infrastructure — something an increasing number of successful companies, including Toshiba Corp., Xerox Corp. and DHL Worldwide Express, are doing (see stories pages 12 to 14). Toshiba claims to have built a PC components subsidiary in half the time as in the past, in part by following a standard IT architecture. And the trend is growing: In *Computerworld*'s survey, respondents were almost evenly split between those who do and those who do not have a global information architecture.

Companies that have built a global IS architecture have also found it's best to standardize on core business systems worldwide. This enables business units to share information and gives the corporation a global view into what's selling best in which regions and who its customers are.

The difficulty, however, lies in deciding which systems get standardized, which can be determined at a local level and how to enable changes to those decisions over time. "Doing this well has to do with building a culture that's willing to use standards and common capabilities as much as possible but understands that they need to try things out on an individual basis and share what they learn," Parkinson said.

A classic way to achieve this culture, he said, is to put IS people in the individual markets to familiarize them with the localization issues. "This allows them to build more flexible core systems that are easier to integrate with," he said. DHL, with its messaging-based distributed architecture, is a perfect example of this (see story page 13).

Strict enforcement of these standards is often necessary. At Solvay S.A., a $321 million international petrochemicals manufacturer headquartered in Belgium, a move to standardize on the likes of SAP AG's R/3 and Microsoft Corp.'s Exchange has met with some resistance from outside headquarters. Five years ago, IS decisions were still made at a national level, with each country choosing its own system — a setup that echoed how Solvay went about most of its business. But then the company decided it was time to take a global view and implement product, marketing, sales and distribution strategies at an international level.

"There have been some cultural problems. Each subsidiary wants to find its own answer. They don't always like decisions that come from little Belgium," said Didier Boschmans, IS adviser at the company.

Solvay has come up with some innovative strategies to solve this problem. For instance, the IS department will help out any staffers grappling with software problems, but if employees are not using the standard setup, they are billed extra for IS time.

Quick thinking like this, in addition to tough determination and close cooperation, is what distinguishes global innovators from mere multinationals.

[
PHOTO OF ROBERT WAXMAN

CAMERA STORE NOT AVAILABLE.

IT'S A VIRTUAL STOREFRONT.
]

For a new camera, visit www.worldavenue.com. For greater exposure, visit
www.internet.ibm.com/secureway/commercepoint.html

S O L U T I O N S

Picture this. You grow a thriving camera business and your thoughts

turn to expansion. Well, that's going to require new capital, a new location, new

personnel and new headaches. Or, simply a new way to expand.

Robert Waxman® Camera & Video built eight stores in Colorado over the

past thirty-seven years. Then, practically overnight, they opened a virtual store

on IBM's new Internet shopping site, World Avenue. And their start-up costs were

less than the price of a few professional cameras.

Now, thanks to the Web, they are a worldwide operation, open for busi-

ness 24 hours a day. Without adding a single new employee, they can offer online

customer service and hundreds of their products to everyone, everywhere. From

proud new mothers in Milan to Hollywood's paparazzi.

The Net-net: Any size business can now sell their products around the world and

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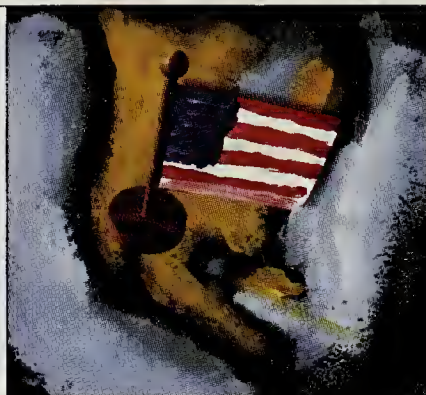
A WORLDWIDE SYSTEM DELIVERS SERVICE THAT'S ANYTHING BUT CARBON-COPY

BY CHRIS STAITI

The Xerox repairman isn't as lonely as the Maytag repairman. He shows up even when nothing is broken.

The most visible member of Team Xerox appears faithfully in offices all over the world to service the company's line of document processing equipment. The Xerox rep, so recognizable you might think he was a carbon copy, represents not one but three entities: Xerox Corp. itself in the Western Hemisphere; Rank Xerox Ltd. in Europe, Africa, the Middle East and parts of Asia; and Fuji Xerox Co. in the Pacific Rim.

Dispersed as it is, Team Xerox presents such a unified front that it has swept every major quality commendation from the Malcolm Baldrige Award to the Deming Prize.

"Our service is not consistent," said Chuck Ray, vice president of customer service delivery at Xerox. Rather, "it is the level of service to the customer that is consistent."

There's a big difference. If you want to meet the needs of users in different economies, cultures and business climates, you can't pound the customer into your service plan, he said. "We attempt to put an overall strategy together and then tailor it to a local area."

Behind that effort is an IS strategy that mirrors Xerox's goal of putting customers first. "The technology and infrastructure that we take for granted in the U.S. is not supported all over the world," said Pat Wallington, chief information

HEADQUARTERS	Stamford, Conn.
GLOBAL PRESENCE	More than 130 countries
TOTAL NUMBER OF COMPANY EMPLOYEES	86,700
TOTAL NUMBER OF IS EMPLOYEES	750 internal; 2,000 from EDS
1996 COMPANY REVENUE	$17.4B

officer. "When we want a copier in the U.S., we want color and double-sided printing. In some places, such as third-world countries, they don't have the infrastructure or the networks robust enough to handle that."

Those variances also affect how Xerox offers service, she said. In the U.S., the company uses the phone or online help to troubleshoot problems. But in South America,

SHONNA VALESKA

XEROX'S PAT WALLINGTON: TECHNOLOGY 'WE TAKE FOR GRANTED IN THE U.S. IS NOT SUPPORTED ALL OVER THE WORLD'

she said, telecommunications is more expensive than labor. Because customers don't have easy access to phone lines, Xerox keeps the service centers open.

That's just the start of the tailoring going on in Xerox's IS strategy. Wallington is wrapping up a two-year systems overhaul that was designed to improve service to worldwide customers. Xerox had been using a proprietary, integrated system called GlobalView, also sold commercially. But while the mainframe-based system was integrated with Xerox's worldwide work processes, it was a closed architecture. "We could communicate very well among ourselves but not with the outside world," she said. "And they couldn't communicate with us."

Furthermore, it was difficult to build interfaces between GlobalView and mobile computing products, which would make it easier to serve remote customers.

Maintaining a focus on the needs of worldwide employees and customers while planning a total systems change and maintaining a large computer system is a tall order. So in 1995, Xerox outsourced a majority of its IS department to Electronic Data Systems Corp. It handles global strategic decisions, such as architecture and new applications development, internally.

At year's end, the transition was 96% complete and the system running at 700 sites worldwide. Wallington called it a "typical client/server system that features industry-standard Windows-based software."

As a result, worldwide customer service reps can better serve remote regions. "Now they can hook the laptop right up to the machine and run diagnostic data right into the laptop," Ray said. Diagnostic software runs an analysis and recommends corrective action.

Today, Xerox can service customers wherever they land. "Sometimes we'll get calls from someone at sea looking for support," Ray said. "So the next time they steam into a port, whether in Vietnam or Italy, we'll get someone over there to help them out."

Staiti is a freelance writer in Somerville, Mass.

DHL WORLDWIDE EXPRESS

GLOBAL SHIPPER IS READY FOR WORLD'S SPECIAL DELIVERY NEEDS

BY ANNA FOLEY

Striking the balance between providing core systems that offer a global view of his company and still catering to varying local needs is an issue that is always foremost for Nigel Green, Hong Kong-based information technology planning manager for DHL Worldwide Express Asia-Pacific.

"The whole ethos of our company is to think globally and act locally," he said. "While we offer global services, we are perceived as locally integrated into the community of each country, and our IT systems need to reflect that."

If, for instance, Japanese customs requires more shipment information than most countries do, DHL provides it. If Japanese customers want to see Japanese characters on-screen, then that's what they get.

DHL tackles the problem by adopting what Green termed a "deep fat" applications infrastructure. "We provide core applications services, accessible to all, which sit on top of a messaging and communications infrastructure," he said. The core services include customer shipment, transit time and billing details. That is the global part of the model.

To cater to local needs, however, DHL has also defined standards allowing developers in individual countries to develop their own applications and link them to the core services using common application programming interfaces, even enabling them to modify their view of the core systems with local-language facilities.

"The idea is that everything is built centrally but has as many hooks as possible for linking in local systems," Green said. "And the core services are highly parameterized, making the business rules easy to tune for different environments."

This parameterization is achieved by designing both a flexible back-end environment and a presentation layer, Green explained. "All parameters aren't necessarily included in the first version of a service. We often add more, following feedback from the various countries."

An example is DHL's global shipment database. Certain countries may wish to add extra shipment checkpoints to the system because of more stringent regulations. In those cases, users can input their unique checkpoint data — data other countries won't see — into the common global database.

The global database actually consists of three Informix Corp. databases held on servers in Singapore, Burlingame, Calif., and Brussels. Shipment messages are transmitted among 400-plus Hewlett-Packard Co. servers around the world. All systems are linked on DHL's worldwide network, DHLnet, built on a TCP/IP over frame-relay architecture. Operations in all 220+ countries have access to this network, which also carries corporate electronic mail and intranet traffic.

Green and his colleagues are also faced with the daunting task of encouraging all local operations to abide by a standard set of IT and business rules. These rules govern activities such as storing shipment information in the global database rather than a locally defined database or capturing and transmitting data in a timely manner.

"All we can do is make those rules as attractive as possible so that they have something to offer everybody," Green said. For instance, countries are given a ready-made interface so data can be uploaded to the common database in ASCII text. Also, DHL publishes an internal report analyzing timeliness of data submissions, "so noncompliance becomes very visible, creating a sense of healthy competition," he said.

Probably the biggest challenge for DHL's IS management lies in just trying to communicate concepts and standards around the globe, Green noted. "We are hoping that intranets and online conferencing will help in that area," he said. The company is already publishing IT standards on Web pages, "and that's making a difference."

Foley is associate editor at Computerworld Hong Kong.

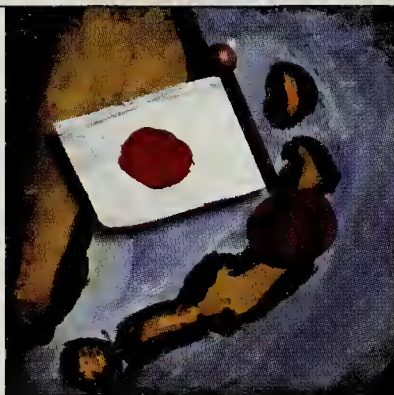|	
HEADQUARTERS	**Brussels**
GLOBAL PRESENCE	**More than 80,000 cities in 220 countries**
TOTAL NUMBER OF COMPANY EMPLOYEES	**More than 40,000**
TOTAL NUMBER OF IS EMPLOYEES	**1,500**
1996 COMPANY REVENUE	**Private company**

DHL'S NIGEL GREEN HOPES INTRANETS AND ONLINE CONFERENCING WILL EASE GLOBAL COMMUNICATION

JOHN STANMEYER

TOSHIBA CORP.

FROM TOASTERS TO DRAMs, THIS GLOBAL SYSTEM FITS ALL

BY ROB GUTH

How has Toshiba Corp. risen to become the world's No. 1 notebook computer maker? By keeping things simple.

Pick up a battleship-gray Toshiba Tecra notebook in Tokyo's Akihabara electronics bazaar and you'll find that, except for the Japanese keyboard and software, it's the same Toshiba as the one on the shelves of CompUSA's shop on New York's Fifth Avenue.

The company has practiced for years what many of its competitors are discovering only now: Success in the cutthroat PC business depends on spreading costs over a large volume of machines based on standard parts.

That philosophy is now guiding the reorganization of Toshiba's worldwide information infrastructure. "We believe that a global business needs a global IS system," said Kyosuke Tsuruta, senior manager at Toshiba's IS Architecture Group. "Rather

HEADQUARTERS	Tokyo
GLOBAL PRESENCE	Over 630 affiliates and subsidiaries in nearly 40 countries
TOTAL NUMBER OF COMPANY EMPLOYEES	186,000
1996 COMPANY REVENUE	$48B (U.S. dollars)

than trying to adapt the IS structure to different [local] requirements, we chose to develop a global IS architecture." Why? "Group companies need a common foundation to share business processes and information with other" partners, he said.

But for a company Toshiba's size, building such a system is no small task. As many of its products are tailored to local tastes and regulations, it must manufacture them close to where they will be sold. But tracking Toshiba's products is like watching a stock ticker: One day the firm might open a new elevator subsidiary in Shanghai, and the next it might sign a deal to supply Cairo with a new metro line system.

As a result, two years ago the company's top management decreed that the IS infrastructure should address three key issues: agility, globalization and productivity. The IS department designed a system that would offer a standard architecture to all of its key overseas subsidiaries — about 100 companies.

The infrastructure consists of a global TCP/IP-based network running over frame relay. Each worker is equipped with Notes, a number of Microsoft Corp. applications and a choice of Netscape Communications Corp.'s Navigator or Microsoft's Internet Explorer. Localized

versions of Oracle Corp.'s applications will handle mission-critical functions such as manufacturing, distribution and finance.

"The architecture helps the global company make quicker decisions and respond with speed to rapidly changing markets," Tsuruta said.

Toshiba had a chance to try out that new architecture when it built a Philippines subsidiary for PC component manufacturing two years ago. It brought the subsidiary from idea to operation in about half the time as in the past.

When all the sites are online in a couple years, Toshiba hopes to cut lead times and inventory to one-third of the present levels.

Toshiba is also implementing a system in May to help it manage worldwide semiconductor demand. DRAMs, the cornerstone of Toshiba's chip business, are standard around the world, but they undergo unexpected changes in demand from PC makers. Thanks to the new system, the Tokyo division will be able to feed daily sales forecasts from domestic and overseas branches to its manufacturing facilities, where the data is used to forecast production needs, said Toshinari Sato, manager of semiconductor marketing and sales planning.

One of the keys Toshiba thinks will help tie its corporate operations to its global units is a data warehouse. When complete, the warehouse will provide detailed breakdowns of the entire company's products, parts and prices, as well as sales and planning information. And the warehouse will act as a centralized repository for an equally broad range of data, such as local market demand and pricing for products from all of Toshiba's local units, Tsuruta said.

But while these concepts look great on paper, the devil is in the details. For instance, a massive effort is needed to actually produce the guidelines and instructions on how to install Microsoft Word, Tsuruta said.

The IS Architecture Group needed to create documents that would be free of the misunderstandings arising from cultural and linguistic differences, Tsuruta said. "People in a different culture may feel uncomfortable if they are given very Japanese architectural guidelines," he said.

Guth is an IDG News Service correspondent in Tokyo.
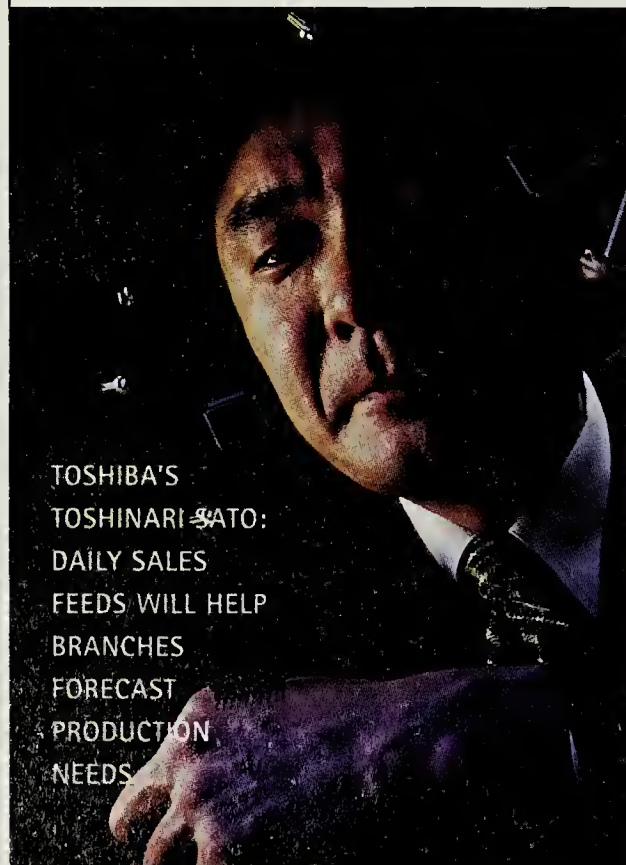
TOSHIBA'S TOSHINARI SATO: DAILY SALES FEEDS WILL HELP BRANCHES FORECAST PRODUCTION NEEDS

TOM WAGNER

AVOIDING A TRANSNATIONAL BREAKDOWN

BY TOM DUFFY

CREATING A CONSISTENT POLICY ACROSS THE BOARD IS KEY TO ENSURING SECURITY AT INTERNATIONAL FIRMS

When the main server in the Sao Paulo, Brazil, office of Young & Rubicam Advertising crashed late one morning in December 1996, it could have been a catastrophe. Instead, it set in motion some well-detailed plans.

A download of the company's Lotus Development Corp. Notes application, which the ad agency depends on for its creative work, media plans and strategy, was immediately initiated from its New York office via its wide-area network. By the end of business that day, the Sao Paulo system was operational. All the while, the ad agency's data was well protected by four levels of redundant backup.

"From a standpoint of data, we didn't lose anything," said David Gutierrez, Young & Rubicam's vice president/regional technology officer for the Southern Hemisphere and the man charged with protecting client data in the increasingly competitive market of Latin America.

Disaster avoidance was not by accident. Two years ago, when the agency launched its WAN in Latin America, Gutierrez wrote a single security plan that worked with the agency's diverse network needs in Argentina, Brazil, Mexico and the U.S. Some 13 other countries in the region operate on independent LANs with dial-up access to the server in New York.

While a single policy serves the entire company, procedures differ slightly in each market. For instance, daily backup tapes are delivered to a storage vault in Brazil and Argentina, but in Mexico, where no such pick-up service exists, the tapes are taken to the home of a Mexican executive.

When operations go international, so do concerns about security. And global companies don't just worry about server crashes and natural disasters. With worldwide threats such as industrial espionage, they need to consider what Kathleen Harvey, senior information security analyst at Datapro Information Services Group, calls "global risk." She said the key is to create, as Young & Rubicam did, a consistent policy across the entire organiza-

tion — not an easily achieved goal.

The key word here is consistency. "If you're an attacker, you'll look for the weakest link," said Jackie Hyde, an information security analyst at Datapro in the UK. Datapro recently conducted a survey on global security, which included 1,342 respondents from the U.S., Canada, Central and South America, Europe and the Asia-Pacific region.

One weak link can lead to hefty losses, especially with the increasing trend among

GLOBAL SECURITY

OUTLAW
EXECUTIVES

BY PETER YOUNG

The politics of encryption technology can be a headache for companies trying to provide secure electronic-mail software for their globe-trotting executives. For executives at Telstra Corp., it has led to a rather bizarre choice: to erase software from their laptops at U.S. airports or risk a breach of customs regulations.

Telstra, an Australian telecommunications provider, sought and won permission from the Australian government for its executives to carry in-house-built E-mail encryption software on trips overseas. If a trip includes a U.S. stopover, however, the travelers have to delete the software from their hard drives before returning home. Otherwise, they run the danger of contravening U.S. laws banning the export of encryption technology using keys longer than 56 bits if the government does not hold an encryption key.

To remove that risk, Telstra has submitted an application for a U.S. reexport license for the software, a spokesman said. But the same dangers lie in wait for any foreign businessmen traveling to Australia with similar software. That's because, under Australia's Customs Act, they are breaking the law if they still have the software on their laptops when they leave the country, no matter how large or small its key length.

Australia is moving to drop that regulation from its Customs Act, according to John Rogers, a special adviser at Australia's Defence Signals Directorate. Australia has also opened negotiations with the U.S. government to remove the threat facing Australian travelers, Rogers said.

For business users of encryption technology hampered by restrictive national policies, this is just the type of international cooperation they'd like to see.

Young is a Queensland editor at Computerworld Australia.

global companies to consolidate data centers from hundreds worldwide to the double and even single digits.

"There's more emphasis on stronger data centers, and that's going to put more emphasis on international telecommunications structures," said Edward Roche, author of the book Managing Information Technology in Multi-National Corporations. "You need to draw up a security plan which addresses global systems and the overall international teleprocessing network. And you need to have certification and rehearsed coordination between the headquarters function and the different domestic operations."

SECURITY STRATEGIES

In support of this coordinated single-policy approach, large disaster recovery service providers such as IBM and Comdisco, Inc. recently announced global business recovery services. That means companies can put their entire organization under one umbrella policy rather than contracting on a regional basis.

The most progressive organizations, according to Datapro, are setting up a small central security team at headquarters and appointing a person responsible for security within each business unit around the world. The central team, headed by a corporate security manager, conducts a risk analysis for the entire organization and then selects a methodology to use around the world. "So they've got a central policy, which the local business uses as a baseline, adding whatever else they might want to. That's how they get around the problem of keeping consistent across companies throughout the world," Hyde said.

For instance, European operations might emphasize physical computer security because, according to the Datapro study, that's where computer theft is highest. "It's a very lucrative field at the moment," Hyde said. "Criminals are targeting large organizations, knowing they're deserted in the evenings. People are gaining access just by walking into the building." In the survey, 52% of European companies reported incidents of computer equipment theft in the previous 12 months.

On the other hand, computer theft is less prevalent in Turkey. American-style mug-

ging is virtually unheard of and burglary extremely rare, according to Ergun Solemez, an information systems consultant to Cenajans/Grey, Turkey's largest advertising agency. One international department store chain boasts a worldwide inventory loss rate averaging 15%, compared with 5% in their Turkish operation.

Notebook computer thefts are also rare. "People are only going to buy a computer here from someone they know personally or from a known company," Solemez said.

A good illustration of a global policy with local controls is found at Telstra Corp., Australia's largest telecommunications company. "We try to work to a collective security model which is adapted to prevailing local conditions and circumstances," said David Harris, general manager for corporate security at the firm, which has operations and joint ventures spanning Asia, Europe and North America. "We have people with skill sets in specialized areas like security who form a centralized resource that can be drawn on, but we also need the experience of the country manager."

Key to this approach is communication between the policy makers and the policy implementers, said John Clark, director of Andersen Consulting's information security practice. "I've seen cases firsthand where companies have a central security group in one country, and they distribute these policies to other countries [that] have not necessarily bought off on those policies," he said.

Another complication: According to Datapro, companies with dedicated security departments are few and far between. Between 1995 and '96, this function decreased 18% in Asia-Pacific companies and 21% in Europe. In the U.S., the number dropped from 86% of companies to 67%. Only in Latin America did the numbers rise, from 52% to 58%.

There are other complications to creating a security policy that works across international boundaries.

Simple geographic distance plays a large role. Telstra's Harris, for instance, warned companies never to rely on business partners when identifying security issues in their region, as they are typically reluctant to volunteer information that puts their country in a bad light. Instead, rely on country managers, he said.

Another complication is differing regional attitudes about the importance of security. Even at Telstra, awareness of hacker intrusion is far less than in the U.S., company officials said. This makes it more difficult to get employees to focus on the problem.

REGULATORY DIFFERENCES

Similarly, less stringent requirements in Europe and Asia allow banks to be more relaxed about disaster recovery plans there than in other parts of the world. Still, international financial institutions have begun fortifying their operations in those regions. "In the U.S., the major [international] banks have been doing disaster recovery for 15 years," said John Jackson, vice president and general manager of Comdisco Professional Services, a leading disaster recovery firm. "Now they're doing it in Europe and Asia even when the local institutions might not be stepping up to it because they don't have the same regulatory requirements."

Legal differences, including lack of a global encryption standard, only complicate the situation. For instance, the Commonwealth Bank of Australia, Australia's largest retail bank, found it had to seek a special dispensation from the Hong Kong government before it was allowed to use its standardized encryption devices in its Hong Kong corporate and merchant banking operations.

Differences in software availability can also make it difficult to implement worldwide blanket strategies. U.S.-based Otis Elevator Co. found that out when it tried to install antivirus programs at its European subsidiaries last year that were different from those at its U.S. headquarters. It was only later, after several virus attacks, that corporate security officials realized the product provided a lower level of protection than similar antivirus software used at corporate headquarters in Farmington, Conn., according to Alfredo DeFilippo, corporate director for information management.

Static if not dwindling expenditures on security measures only complicate the picture. Datapro's survey of computer security issues noted that average security spending remains steady at about 5% of IT budgets.

The number of companies with published security policies is also in decline. In 1992, 82% had published policies, compared with 54% in 1996. The highest percentage of companies with security policies was in the U.S. and Canada, while the highest percentage planning to implement a security policy in the next 12 months was in the Asia-Pacific region. But the decline was most evident in Europe, with a 10% decrease between '95 and '96.

"Even more worrying are the number of companies that don't have [a policy] because they think they don't need one," said Hyde, who attributes that phenomenon to "information fatigue syndrome."

But it's clear that security can't remain on the back burner. "We have not yet seen reports of global disasters — you know, transnational computer breakdowns," author Roche said. "But with the rise of distributed processing and global telecommunications networking resulting in more and more dependence on international telecommunications circuits, we're bound to see this type of thing occur more."

Duffy is a freelance writer in Somerville, Mass. Contributors to this report include William Spain, a freelance writer in Chicago; Jeffrey Zbar, a freelance writer in Hollywood, Fla.; and Peter Young, a Queensland editor at Computer-World Australia.

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